FIG.1

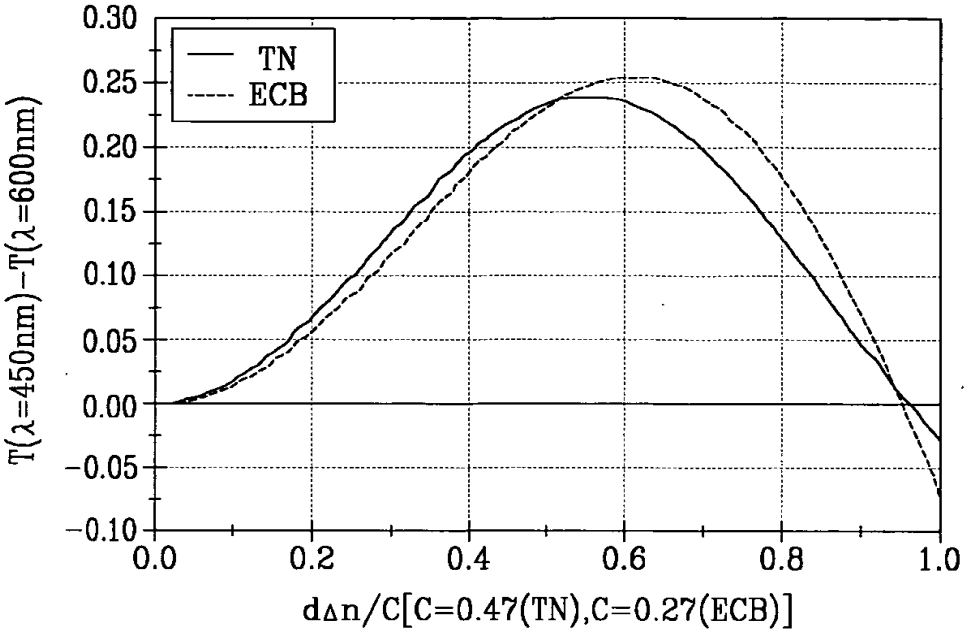

TN
ECB
0.30
0.25
0.20
0.15
0.10
0.05
0.00
−0.05
−0.10
0.0
0.2
0.4
0.6
0.8
1.0
T(λ=450nm)−T(λ=600nm)
dΔn/C[C=0.47(TN),C=0.27(ECB)]

FIG.2

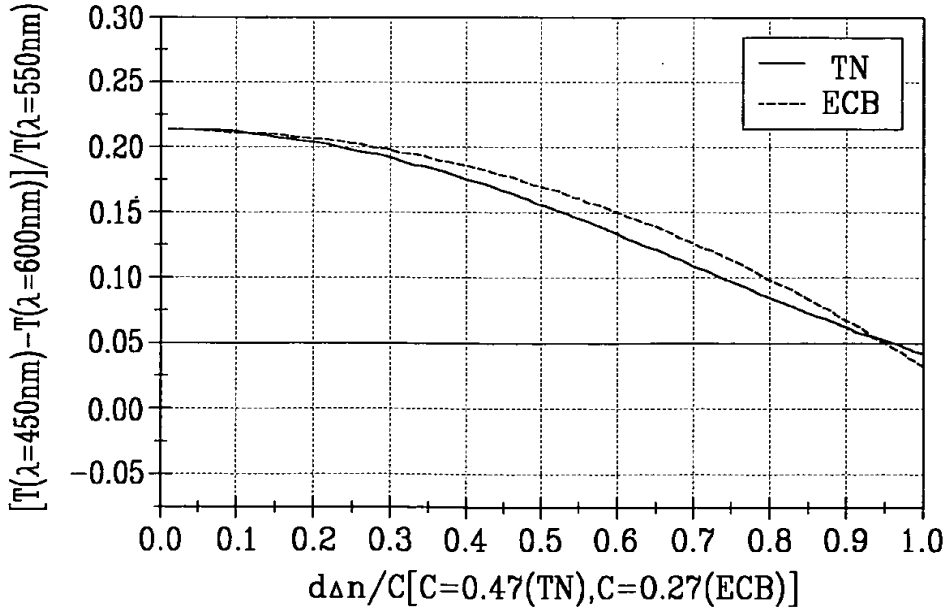
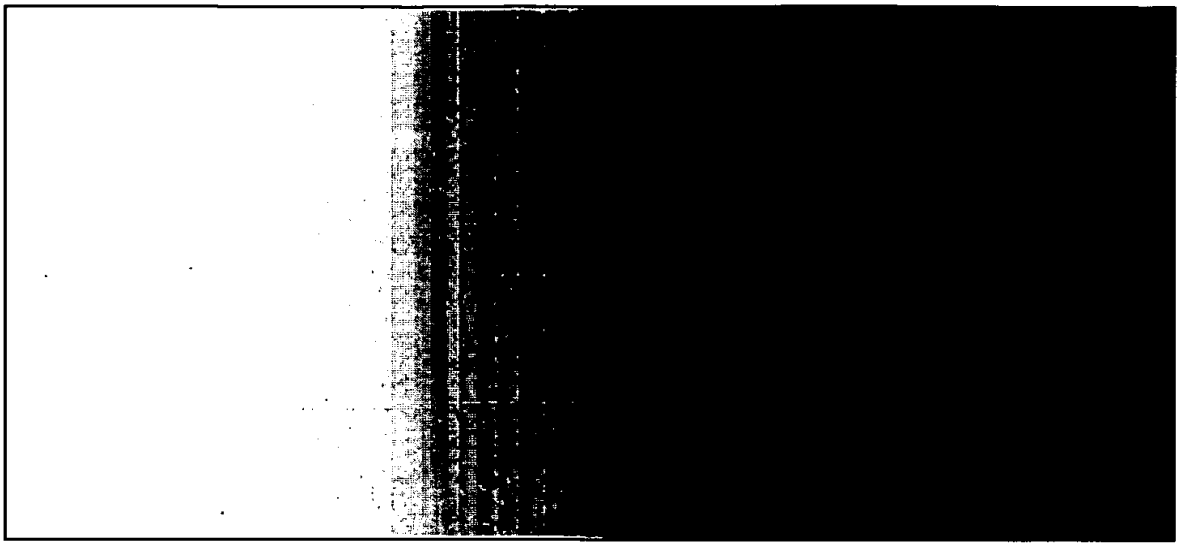

TN
ECB
0.30
0.25
0.20
0.15
0.10
0.05
0.00
−0.05
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
[T(λ=450nm)−T(λ=600nm)]/T(λ=550nm)
dΔn/C[C=0.47(TN),C=0.27(ECB)]

FIG.3A



Predominance in R content

Predominance in B content

FIG.3B

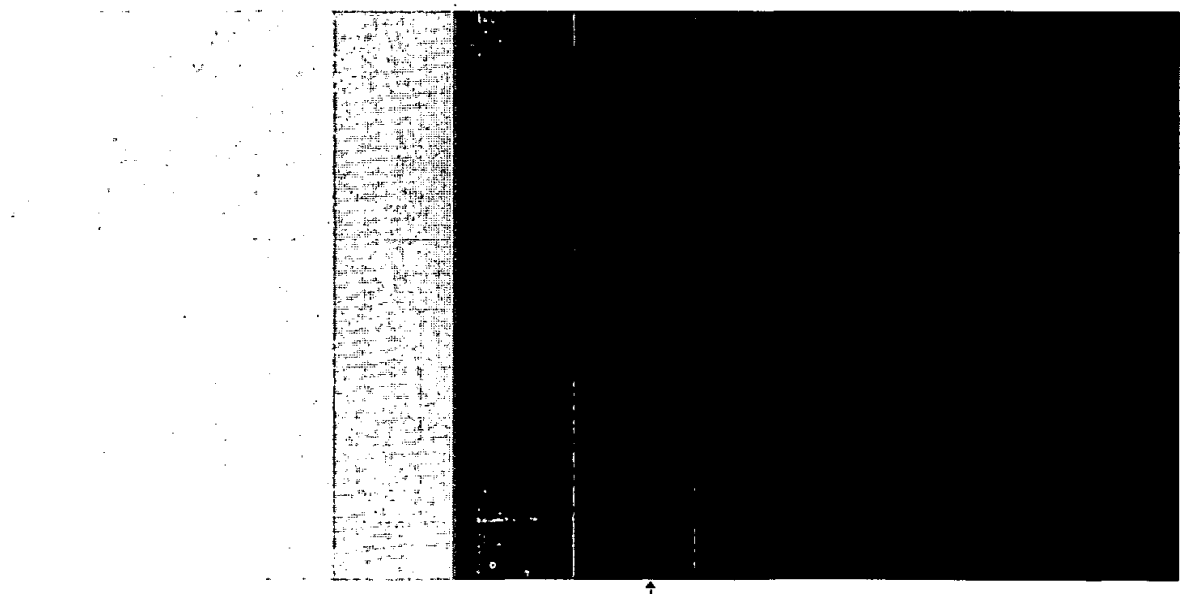


FIG.4

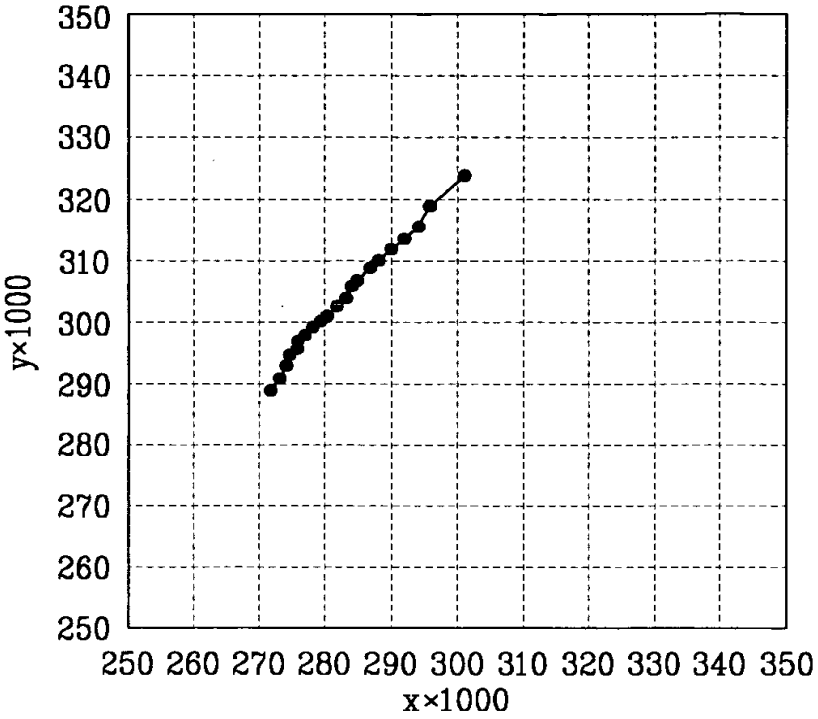

350
340
330
320
310
300
290
280
270
260
250
y×1000
250 260 270 280 290 300 310 320 330 340 350
x×1000

FIG.5

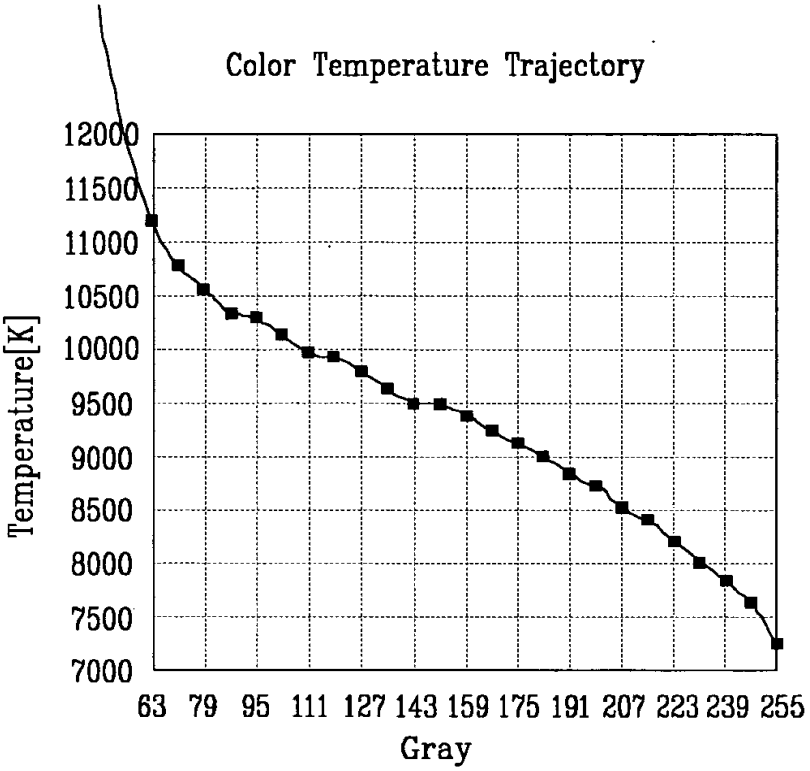

Color Temperature Trajectory
Temperature[K]
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
63 79 95 111 127 143 159 175 191 207 223 239 255
Gray

FIG.6

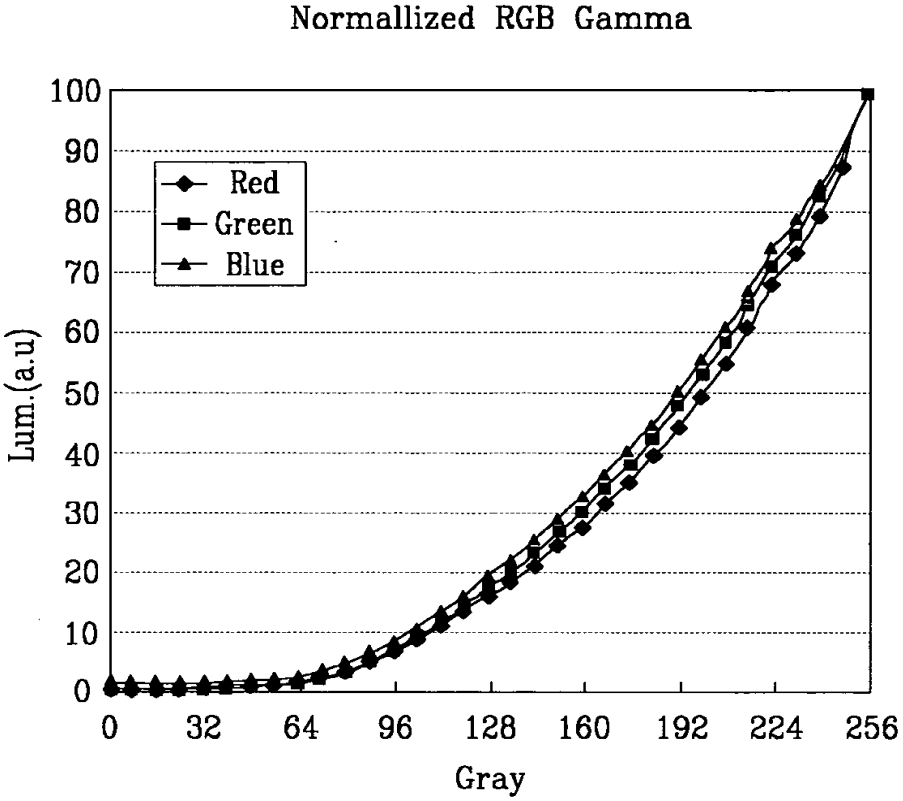

Normallized RGB Gamma
Red
Green
Blue
Lum.(a.u)
Gray
0
10
20
30
40
50
60
70
80
90
100
0
32
64
96
128
160
192
224
256

FIG.7

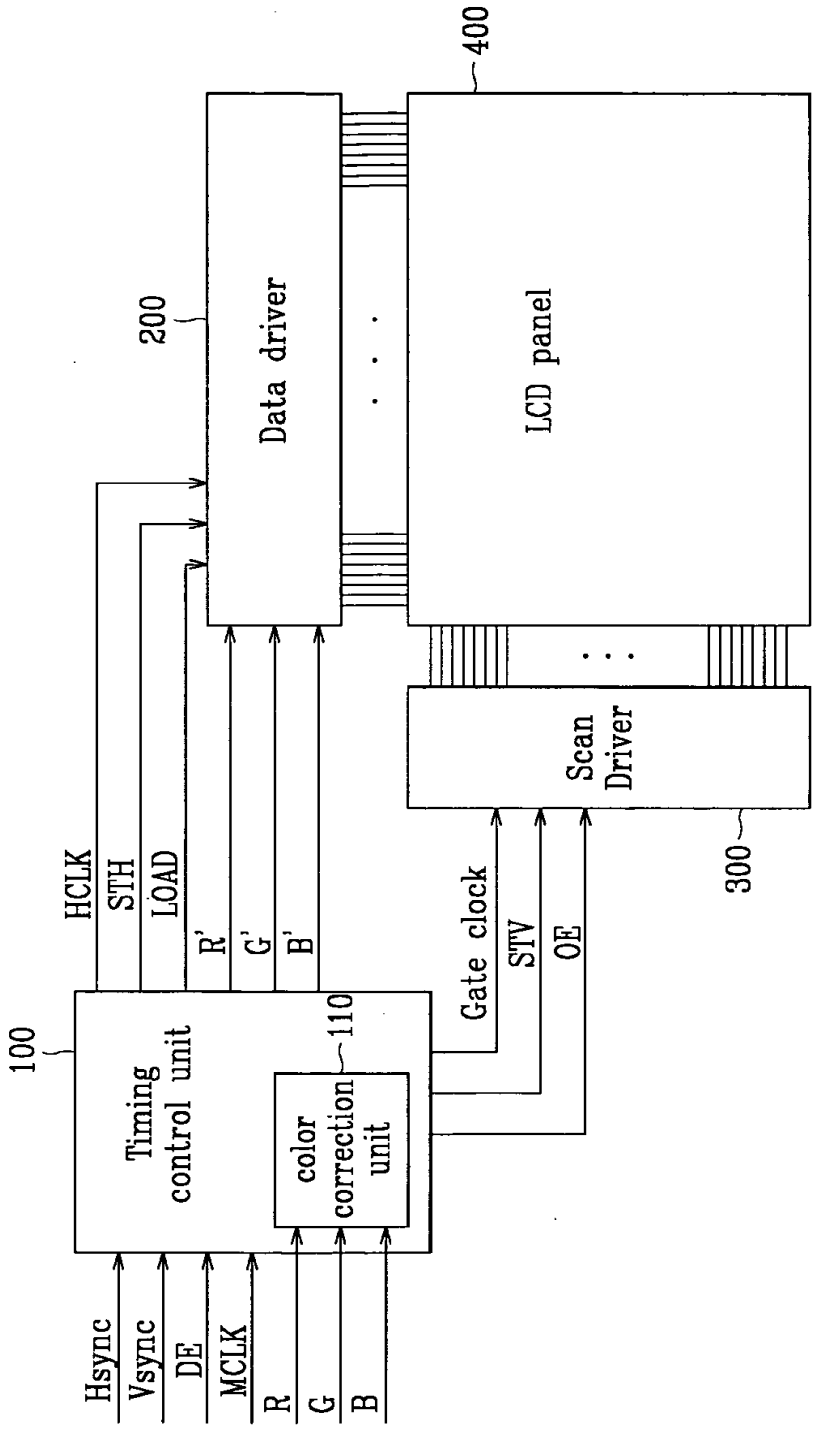

400
200
Data driver
LCD panel
Scan Driver
300
100
Timing control unit
110
color correction unit
HCLK
STH
LOAD
R'
G'
B'
Gate clock
STV
OE
Hsync
Vsync
DE
MCLK
R
G
B

FIG.8

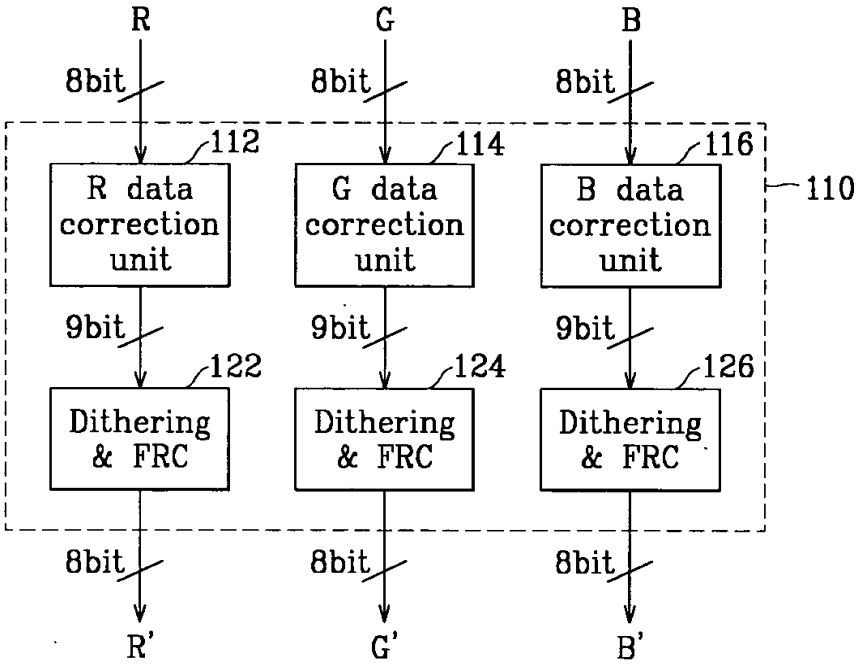

100
R
G
B
8bit
8bit
8bit
112
114
116
R data correction unit
G data correction unit
B data correction unit
110
9bit
9bit
9bit
122
124
126
Dithering & FRC
Dithering & FRC
Dithering & FRC
8bit
8bit
8bit
R'
G'
B'

FIG.9

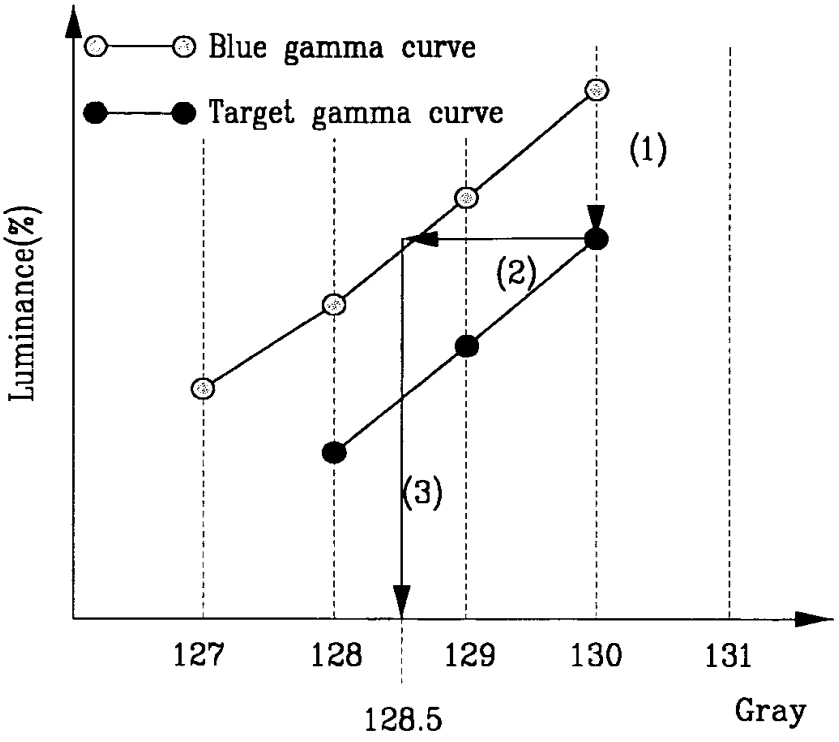

Blue gamma curve
Target gamma curve
Luminance(%)
(1)
(2)
(3)
127
128
129
130
131
128.5
Gray

FIG.10

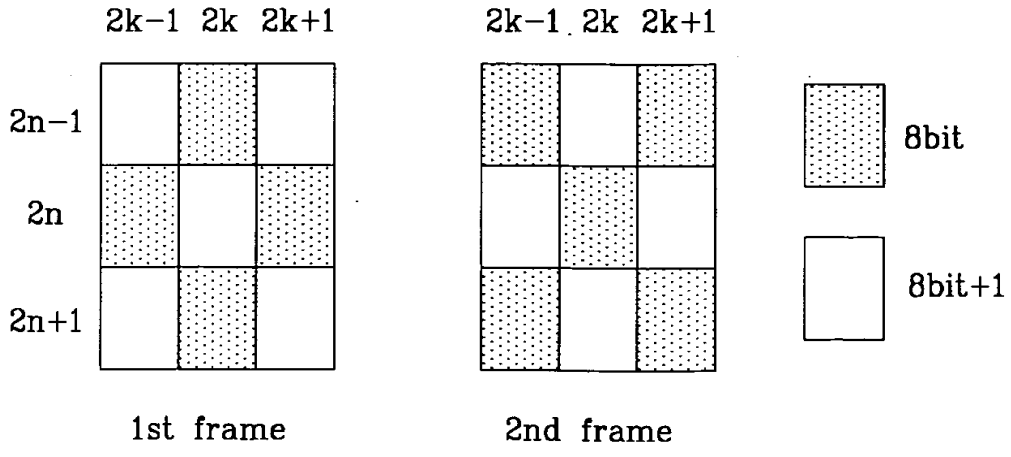

2k-1 2k 2k+1
2n-1
2n
2n+1
1st frame
2k-1 2k 2k+1
2nd frame
8bit
8bit+1

FIG.11

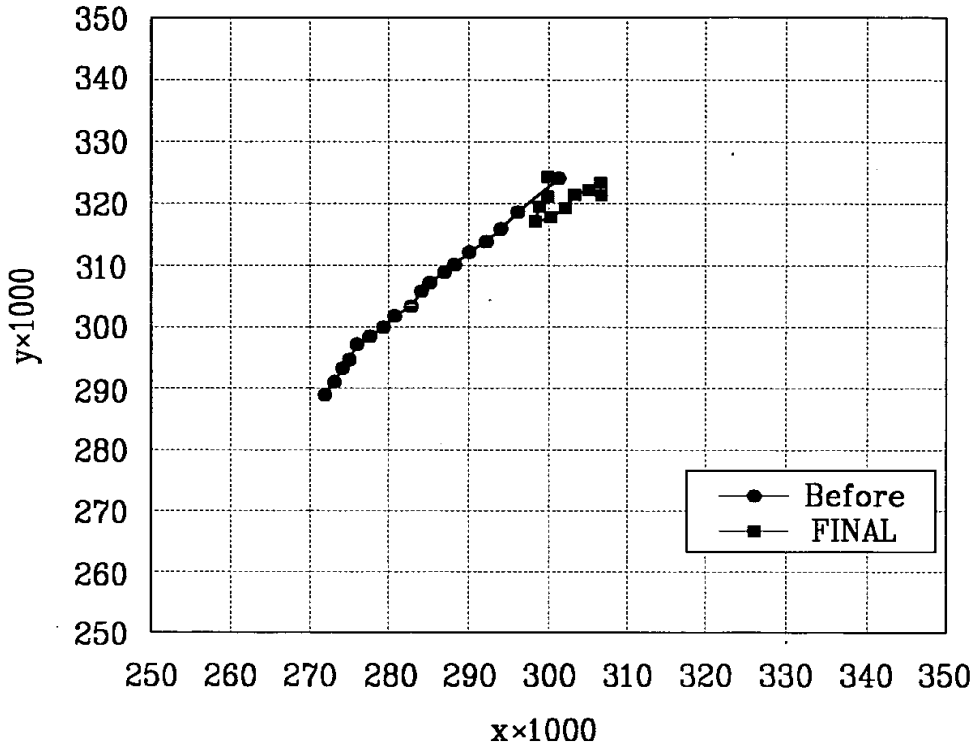

350
340
330
320
310
300
290
280
270
260
250
y×1000
250 260 270 280 290 300 310 320 330 340 350
x×1000
Before
FINAL

FIG.12

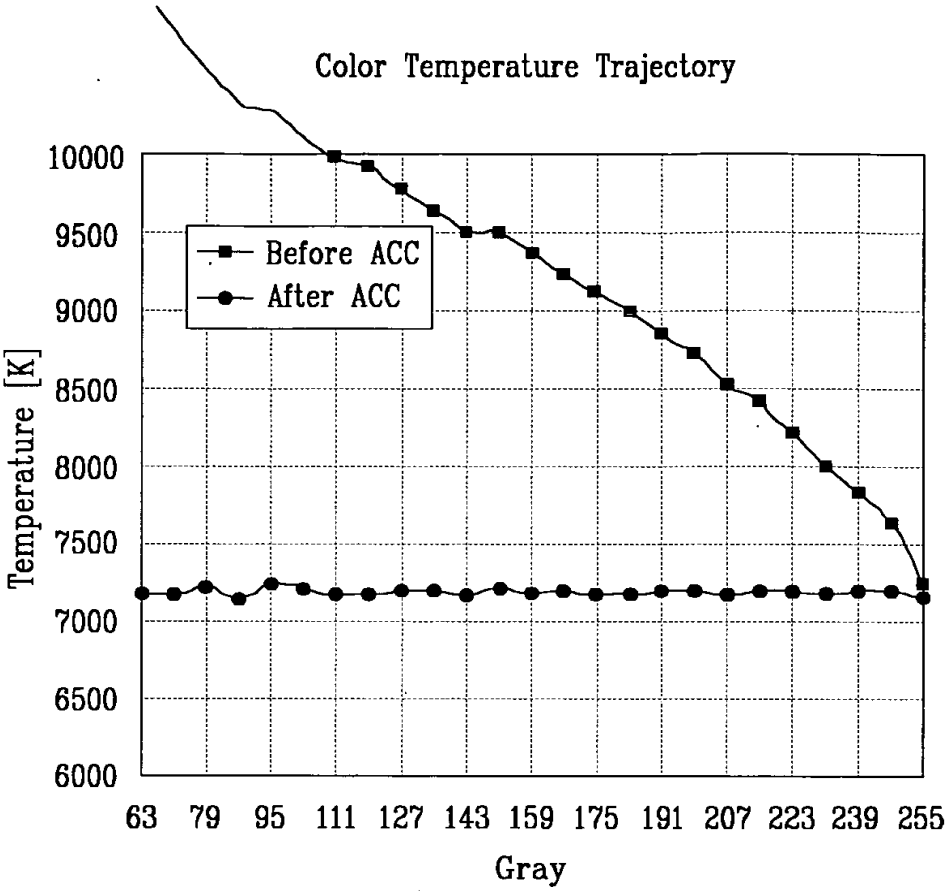

Color Temperature Trajectory
Temperature [K]
10000
9500
9000
8500
8000
7500
7000
6500
6000
Before ACC
After ACC
63 79 95 111 127 143 159 175 191 207 223 239 255
Gray

FIG.13

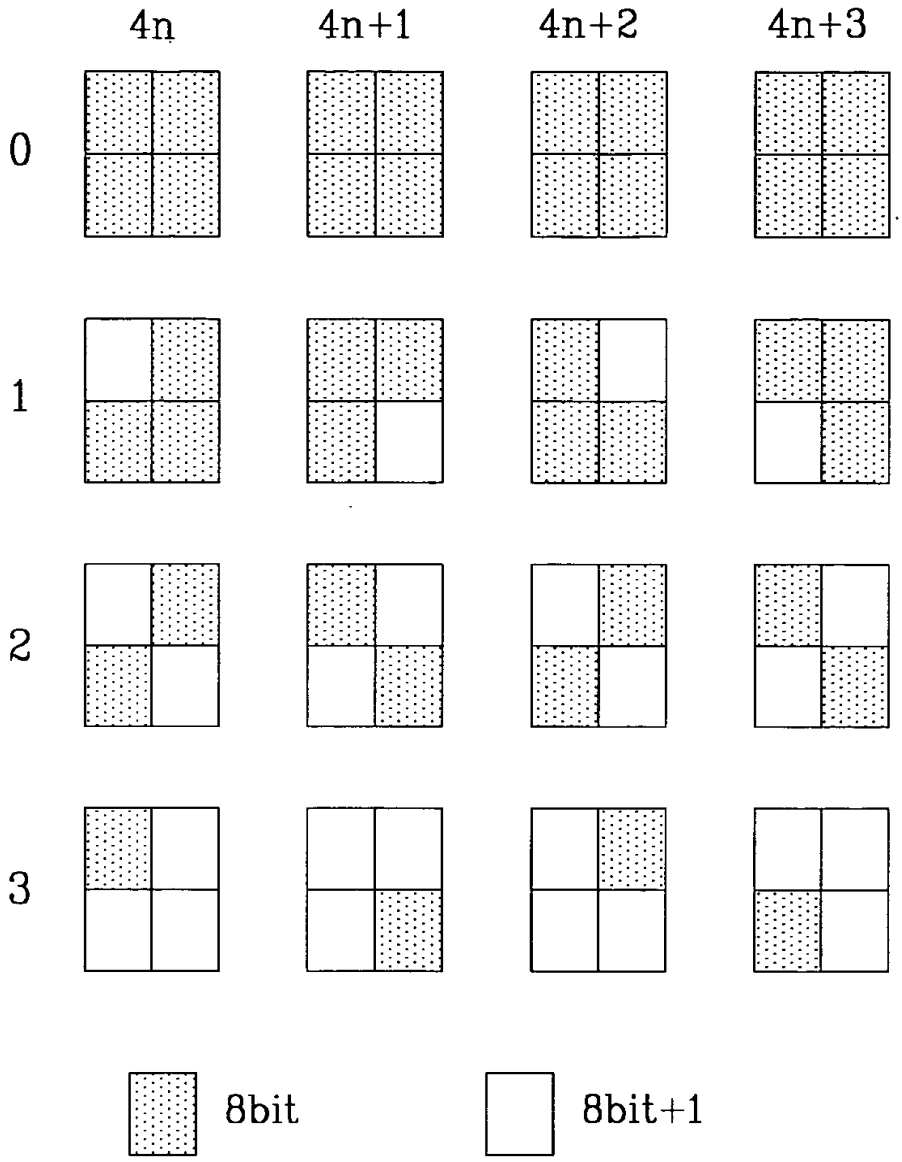


FIG.14

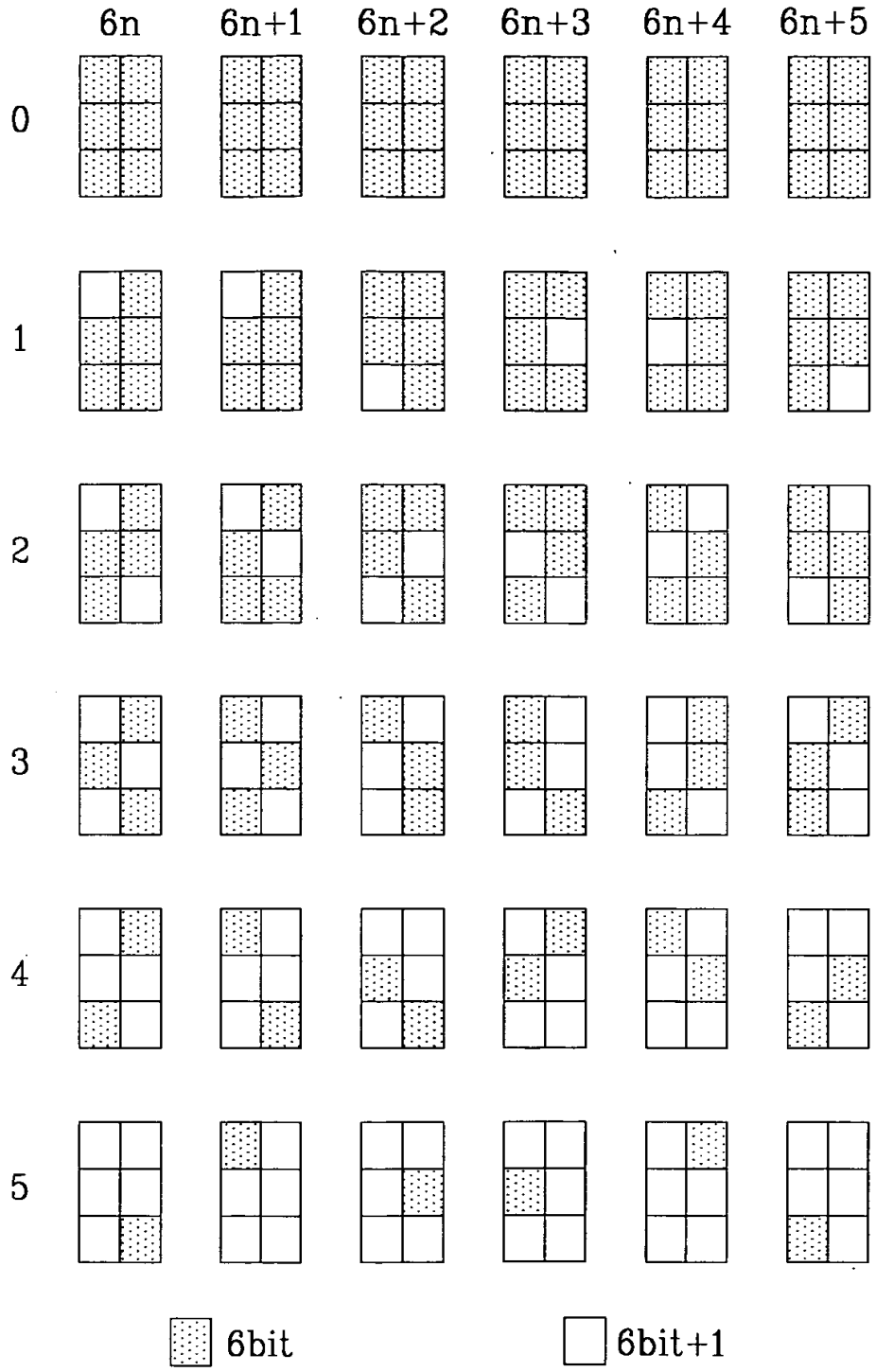
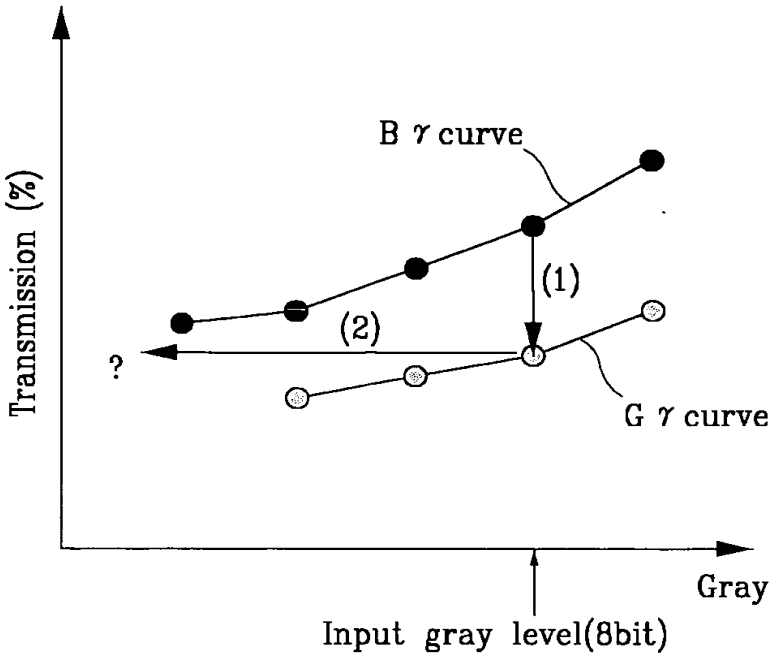


FIG.15



0960139 .11259

FIG.16

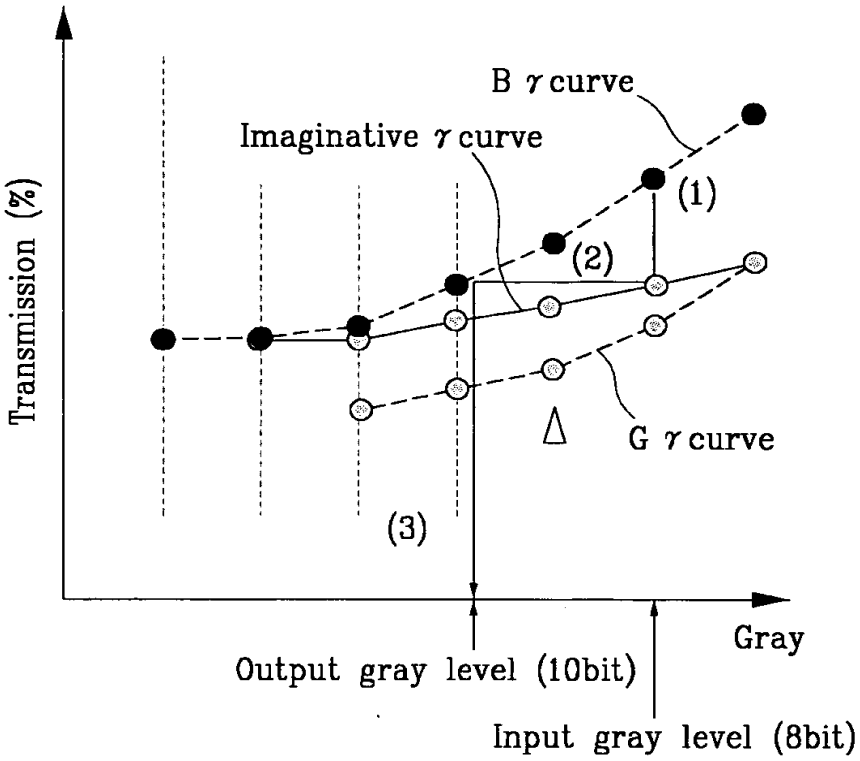

B γ curve
Imaginative γ curve
(1)
(2)
(3)
Δ
G γ curve
Transmission (%)
Gray
Output gray level (10bit)
Input gray level (8bit)

FIG.17

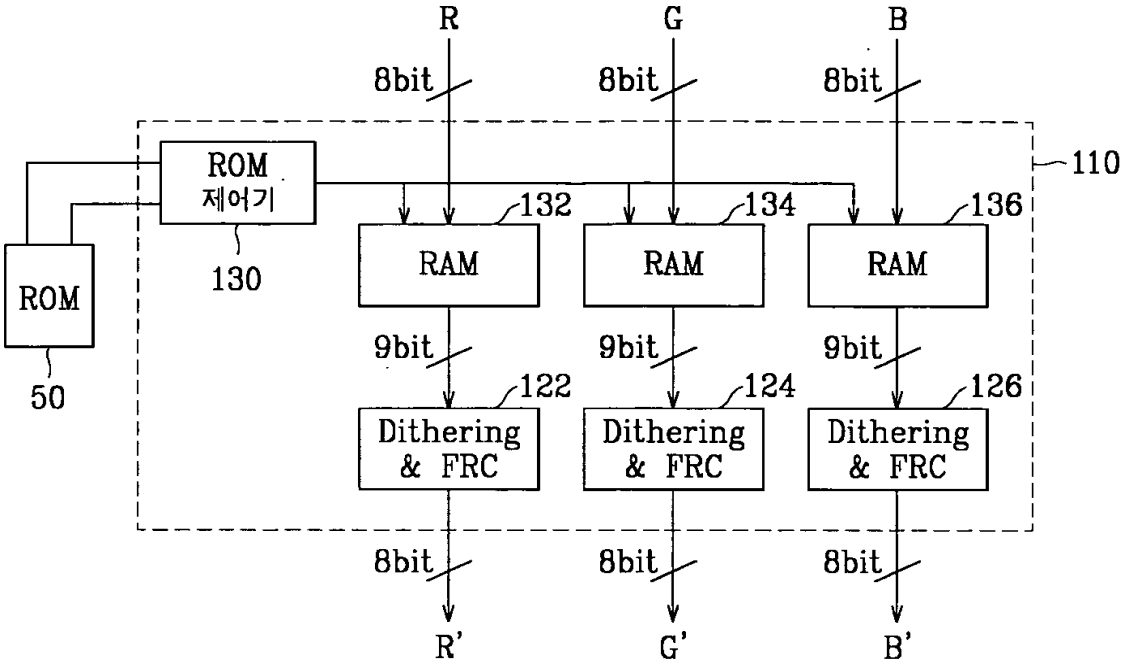

100
R
G
B
8bit
8bit
8bit
ROM
제어기
130
ROM
50
110
132
134
136
RAM
RAM
RAM
9bit
9bit
9bit
122
124
126
Dithering
& FRC
Dithering
& FRC
Dithering
& FRC
8bit
8bit
8bit
R'
G'
B'

FIG.18

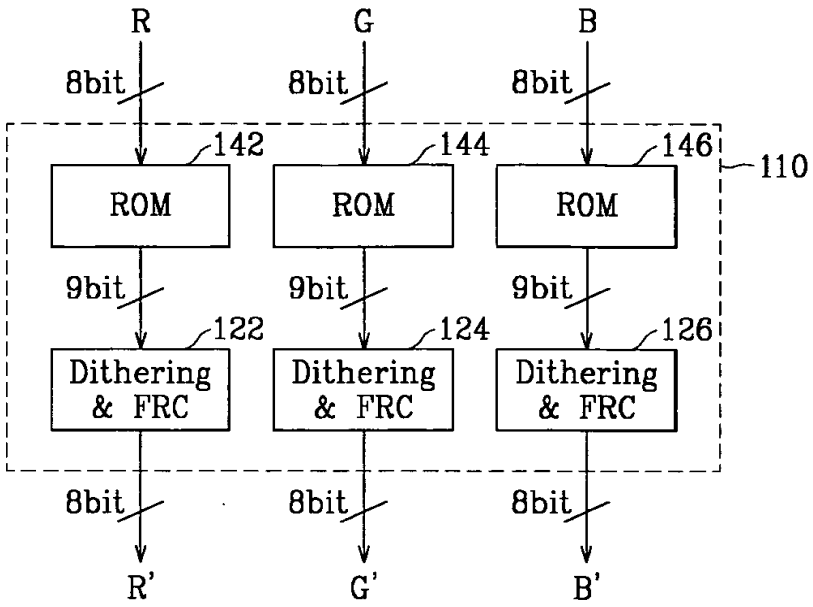
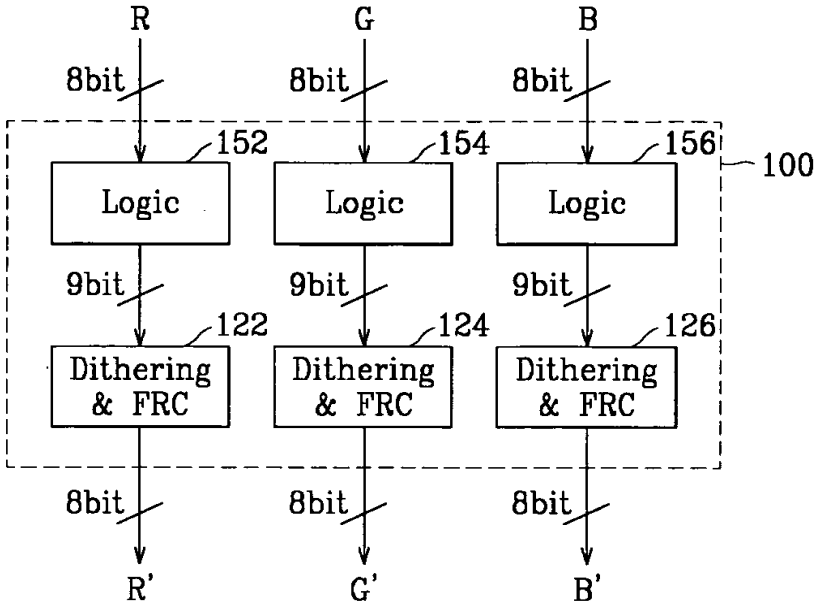

100
R
G
B
8bit
8bit
8bit
142
144
146
110
ROM
ROM
ROM
9bit
9bit
9bit
122
124
126
Dithering & FRC
Dithering & FRC
Dithering & FRC
8bit
8bit
8bit
R'
G'
B'

FIG.19

100


R
G
B
8bit
8bit
8bit
152
154
156
100
Logic
Logic
Logic
9bit
9bit
9bit
122
124
126
Dithering & FRC
Dithering & FRC
Dithering & FRC
8bit
8bit
8bit
R'
G'
B'